

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Koji SHIMAZAWA

Application No.: 09/899,951

Filed: July 9, 2001

For: MAGNETORESISTIVE EFFECT THIN-  
FILM MAGNETIC HEAD



Group Art Unit: Unassigned

Examiner: Unassigned

**REQUEST FOR CORRECTED OFFICIAL FILING RECEIPT**

Assistant Commissioner for Patents  
Office of Initial Patent Examination  
Customer Service Center  
Washington, D.C. 20231

Sir:

Enclosed is a copy of the Official Filing Receipt marked in red to show corrections that are needed. The corrections are as follows.

Under TOT CLAIMS, delete [1] and insert --14--; under IND CLAIMS, delete [1] and insert --2--; also, in the Title, delete [thin-film] and insert [thin-film].

Issuance of a corrected Official Filing Receipt is respectfully requested.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By:

  
Ellen Marcie Emas  
Registration No. 32,131

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

Date: October 22, 2001



Patent  
Attorney's Docket No. 033211-011

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Koji SHIMAZAWA

Application No.: 09/899,951

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For: MAGNETORESISTIVE EFFECT THIN-  
FILM MAGNETIC HEAD

Group Art Unit: Unassigned

Examiner: Unassigned

**LETTER**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Our office filed a Transmittal Letter for Missing Part of Application, to include an executed Declaration, a verified English translation of the specification, a Submission of Substitute Formal Drawings and a Request for Corrected Official Filing Receipt in the U.S. Patent and Trademark Office on October 22, 2001. Since our office did not receive the stamped PTO postcard receipt regarding our submission, a courtesy copy of the as-filed documents is being provided.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By:

Ellen Marcie Emas  
Registration No. 32,131

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

Date: October 23, 2001

The PTO did not receive the following  
listed item(s) Check  
in Amount of \$260

(5/01)



Patent  
Attorney's Docket No. 033211-011

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of )  
Koji SHIMAZAWA ) Group Art Unit: Unassigned  
Application No.: 09/899,951 ) Examiner: Unassigned  
Filed: July 9, 2001 )  
For: MAGNETORESISTIVE EFFECT THIN- )  
FILM MAGNETIC HEAD )

**TRANSMITTAL LETTER FOR MISSING PARTS OF APPLICATION**

**BOX: MISSING PART**  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In complete response to the Notice to File Missing Parts of Application Under 37 C.F.R.  
§ 1.53(b) dated August 24, 2001, enclosed please find:

- ☒ a Combined Declaration and Power of Attorney signed by the inventor(s) and the surcharge of [ ] \$65.00 (205) ☒ \$130.00 (105) as set forth in 37 C.F.R. § 1.16(e);
- ☐ Note that the inventor(s) identified on the currently filed Combined Declaration and Power of Attorney are different than listed on the application filing papers.
- ☐ a Request for Refund;
- ☐ a Petition for Extension of Time;
- ☒ a verified English translation of the Application, and the \$130.00 (139) fee as set forth in 37 C.F.R. § 1.17(k);
- ☒ an Assignment document and a separate check for the \$40.00 (581) Assignment recordation fee;
- ☐ drawings for publication;
- ☒ other Submission of Substitute Formal Drawings w/9 Sheets, Fig(s) 1-16; and Request for Corrected Official Filing Receipt (with references);

**DOCKETED**  
filed 10-22-01

(05/01)



Transmittal Letter for Missing Parts of Application  
Attorney's Docket No. 033211-011  
Application No. 09/899,952  
Page 2

- ☒ a check in the amount of \$ 260.00 for the fee due for missing parts; and  
☐ charge \$ \_\_\_\_\_ to Deposit Account No. 02-4800 for the fee due for missing parts.  
☐ Small entity status is hereby claimed.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

By

Ellen Marcie Emas  
Registration No. 32,131

Date: October 22, 2001

# COPY

## Utility Patent Application Transmittal Letter

Attorney's Docket No. 033211-011

Page 2

☒ The filing fee has been calculated as follows [ ] and in accordance with the enclosed preliminary amendment:

OCT 23 2001

CLAIMS					
	NO. OF CLAIMS		EXTRA CLAIMS	RATE	FEE
Basic Application Fee					\$710.00 (101)
Total Claims	14	MINUS 20 =	0	× \$18.00 (103) =	0.00
Independent Claims	2	MINUS 3 =	0	× \$80.00 (102) =	0.00
If multiple dependent claims are presented, add \$270.00 (104)					0.00
Total Application Fee					710.00
If small entity status is claimed, subtract 50% of Total Application Fee					0.00
Add Assignment Recording Fee \$ if Assignment document is enclosed					0.00
TOTAL APPLICATION FEE DUE					710.00

- [ ] This application is being filed without a filing fee. Issuance of a Notice to File Missing Parts of Application is respectfully requested.
- ☒ A check in the amount of \$ 710.00 is enclosed for the fee due.
- [ ] Charge \$ \_\_\_\_\_ to Deposit Account No. 02-4800 for the fee due.
- ☒ The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Please address all correspondence concerning the present application to:

Ellen Marcie Emas  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.  
P.O. Box 1404  
Alexandria, Virginia 22313-1404.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By:

Ellen Marcie Emas  
Registration No. 32,131

Date: July 9, 2001

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

Inventor: Koji SHIMAZAWA

Appln. No. 09/899,951

Filing Date: July 9, 2001

Docket No.: 033211-011

Work Atty: EME/ali

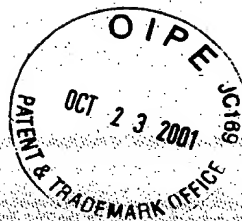
Date: October 22, 2001



The following was/were received in the U.S. Patent and Trademark Office on the date stamped hereon:

- Stamp:** OIPF, OCT 23 2001, PATENT & TRADEMARK
- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Amendment or Response   | <input type="checkbox"/> Certificate Under 37 C.F.R. § 3.73(b)                                      | <input checked="" type="checkbox"/> Check for \$ <u>260.00</u> is enclosed   |
| <input type="checkbox"/> Preliminary Amendment   | <input checked="" type="checkbox"/> Transmittal Letter for Missing Parts of Application             | <input type="checkbox"/> Check for \$ <u>    </u> is enclosed  |
| <input type="checkbox"/> Reply Transmittal Letter  | <input checked="" type="checkbox"/> Executed Declaration/Power of Attorney                          | <input type="checkbox"/> Charge \$ <u>    </u> to Deposit Account  |
| <input type="checkbox"/> Petition for <u>    </u> Month Extension of Time  | <input type="checkbox"/> Assignment/Assignment Recordation Form Cover Sheet (PTO-1595)              | <input type="checkbox"/> Issue Fee Transmittal   |
| <input type="checkbox"/> Submission of Formal Drawings w/ <u>    </u> sheet(s) of drawings (Fig(s). 1- <u>    </u> ) | <input type="checkbox"/> Claim for Convention Priority w/ <u>    </u> certified copy(s)             | <input type="checkbox"/> Payment of Issue Fee and Authorization to charge Deposit Account  |
| <input type="checkbox"/> Request for Approval of Drawing Changes w/ <u>    </u> sheet(s) of red ink drawings         | <input type="checkbox"/> Information Disclosure Statement w/ <u>    </u> document(s)                | <input type="checkbox"/> Request for Refund  |
| <input type="checkbox"/> Notice of Appeal  | <input type="checkbox"/> Information Disclosure Citation (PTO-1449)                                 | <input type="checkbox"/> Status Inquiry  |
| <input type="checkbox"/> Brief for Appellant   | <input type="checkbox"/> Information Disclosure Statement Transmittal Letter                        | <input checked="" type="checkbox"/> Request for Corrected Filing Receipt w/copy of Official Filing Receipt   |
| <input type="checkbox"/> Request for Oral Hearing  | <input type="checkbox"/> Request for Corrected Notice of Recordation of Assignment w/copy of Notice | <input checked="" type="checkbox"/> Verified English Translation   |
| <input type="checkbox"/> Reply Brief   | <input type="checkbox"/> Request for Continued Examination  | <input checked="" type="checkbox"/> Submission of Substitute Formal Drawings   |
| <input type="checkbox"/> Response to Restriction Requirement or Election of Species                                  |   | <input checked="" type="checkbox"/> 2 <sup>nd</sup> page of Application Transmittal Letter and 1 <sup>st</sup> page of Specification for references only |
| <input type="checkbox"/> Terminal Disclaimer   |   |  |

(10/00) **ENDFIELD**



DATE: 10/22/01

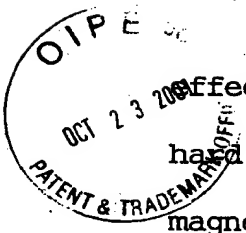
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DE	GL CODE	CLIENT CODE	DESCRIPTION	INVOICE NO.	INVOICE AMT.
		033211.011	110 COMMISSIONER OF PATENTS 09/899,951		\$260.00
BURNS, DOANE, SWECKER & MATHIS, L.L.P. ALEXANDRIA, VIRGINIA 22313-1404					

# COPY

## MAGNETORESISTIVE EFFECT THIN-FILM MAGNETIC HEAD

### FIELD OF THE INVENTION

The present invention relates to a magnetoresistive effect (MR) thin-film magnetic head that is applicable to a hard disk drive (HDD) apparatus and provided with a tunnel magnetoresistive effect (TMR) element or a current perpendicular to the plane giant magnetoresistive effect (CPP-GMR) element, in which a current flows in a direction perpendicular to surfaces of layers.

### DESCRIPTION OF THE RELATED ART

Recently, in order to satisfy the demand for higher recording density in an HDD apparatus, higher sensitivity and larger output of a thin-film magnetic head are required. A TMR element and a CPP-GMR element meet these requirements and are beginning to receive attention. The TMR element, disclosed in Japanese patent publication No. 04103014A for example, utilizes a ferromagnetic tunnel effect and has a multi-layered structure including a lower ferromagnetic thin-film layer, a tunnel barrier layer and an upper ferromagnetic thin-film layer. The CPP-GMR element is one type of GMR element of a multi-layered structure including a lower ferromagnetic thin-film layer, a nonmagnetic metal layer and an upper ferromagnetic thin-film layer. In the CPP-GMR



DECLARATION

COPY

I, Hiroshi MURANO of Maruman Building, 11-1, Nishi-Shinbashi 1-chome, Minato-ku, Tokyo, Japan hereby certify that I am a translator of the attached documents and familiar with English, and that the documents are true translation to the best of my knowledge and belief.

This 25th day of September, 2001.

A handwritten signature in black ink, appearing to be 'Hiroshi MURANO', written over a horizontal line.

Hiroshi MURANO

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Koji SHIMAZAWA

Application No.: 09/899,951

Filed: July 9, 2001

For: MAGNETORESISTIVE EFFECT THIN-  
FILM MAGNETIC HEAD



Group Art Unit: Unassigned

Examiner: Unassigned

SUBMISSION OF SUBSTITUTE FORMAL DRAWINGS

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In response to the Notice to File Missing Parts dated August 24, 2001, submitted herewith  
are the substitute formal drawings in connection with the application identified above.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 

Ellen Marcie Emas

Registration No. 32,131

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

Date: October 22, 2001



## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/899,951	07/09/2001		710	033211-011	9	+14	+2

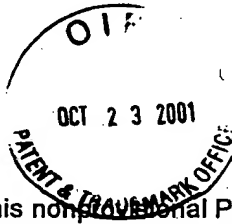
CONFIRMATION NO. 5936

## FILING RECEIPT



\*OC00000006471672\*

Ellen Marcie Emas  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.  
P.O. Box 1404  
Alexandria, VA 22313-1404



Date Mailed: 08/24/2001

Receipt is acknowledged of this non-provisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

## Applicant(s)

Koji Shimazawa, Tokyo, JAPAN;

## Domestic Priority data as claimed by applicant

## Foreign Applications

JAPAN 208401/2000 07/10/2000

If Required, Foreign Filing License Granted 08/24/2001

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

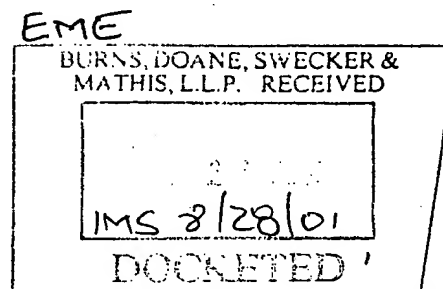
## Title

Magnetoresistive effect thin-film magnetic head

thin-film

## Preliminary Class

Yamamoto Patent &amp; Engineering



Data entry by : GURMU, MULUEMEBET

Team : OIPE

Date: 08/24/2001



## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/899,951	07/09/2001	Koji Shimazawa	033211-011

CONFIRMATION NO. 5936

## FORMALITIES LETTER



\*OC000000006471673\*

Ellen Marcie Emas  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.  
P.O. Box 1404  
Alexandria, VA 22313-1404

Date Mailed: 08/24/2001

## NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

*Filing Date Granted*

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is unsigned.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.
- The application was filed in a language other than English. Applicant is required to provide an English translation of the specification and a statement that the translation is accurate. (See 37 CFR 1.52(d)).
- Applicant must file an English translation of the application, the \$ 130 fee set forth in 37 CFR 1.17(i), unless previously submitted, and a statement that the translation is accurate (37 CFR 1.52(d)).
- The balance due by applicant is \$ 260.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:

- drawing figures contain text that is not in English (including, for example, a flow chart that was originally not in English that has been marked up to include the English text) see 37 CFR 1.84(p)(2) and 37 CFR 1.52(d)(1);

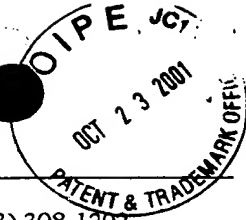
Yamamoto Patent  
Engineers

BURNS, DOANE, SWECKER &  
MATHIS, L.L.P. RECEIVED

DOCKETED

A copy of this notice **MUST** be returned with the reply.

Declaration, English Translation and Doc  
Substitute Drawings



*MW*

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 1 - ATTORNEY/APPLICANT COPY

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